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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,020	12/21/2001	Gin Liu	213202.00355	3692
27160	7590	09/05/2006	EXAMINER	
PATENT ADMINISTRATOR KATTEN MUCHIN ROSENMAN LLP 1025 THOMAS JEFFERSON STREET, N.W. EAST LOBBY: SUITE 700 WASHINGTON, DC 20007-5201			GHULAMALI, QUTBUDDIN	
		ART UNIT	PAPER NUMBER	
		2611		
DATE MAILED: 09/05/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/024,020	LIU ET AL.
	Examiner Qutub Ghulamali	Art Unit 2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 05 July 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-7, 10-16 and 31-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-7, 10-16 and 31-37 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 21 December 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/05/2006 has been entered.

### ***Response to Amendment***

2. Applicant's remark/amendments, filed 07/05/2006, with respect to the rejection(s) of claim(s) 1-7, 10-16, 31-37 under 35 U.S.C 102(e), have been fully considered. The amendment however, does not place the application in condition for allowance. A new ground of rejection based on continued examination and amendment filed 07/05/2006, is made herein. The rejection follows.

### ***Drawings***

3. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing.

Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

The drawing marked as "Figure" is objected to under 37 CFR 1.83(a) because it fail to show, a first and second circuit for determining and storing, a first receiver for retrieving, an analyzer, etc..., as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet, should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7, 10-16, 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levin (USP 6,130,882) in view of Zuranski et al (USP 6,263,077).

Regarding claims 1 and 10, Levin discloses a method and an apparatus of retrieving channel characteristics of a discrete multi-tone communication channel comprising:

determining and storing on a per bin basis channel frequency response and noise measurements at a first end (Central Office (CO)) of the channel at initialization (abstract; col. 1, lines 37-42; col. 3, lines 60-63);

determining and storing a signal-to-noise measurement on a per bin basis at the first end (Central Office (CO)) at show time (col. 4, lines 1-9; col. 8, lines 10-25); retrieving the stored (look-up table) channel frequency response, noise and signal-to-noise measurements at a second end of the channel (CPE) (col. 8, lines 10-15). Levin does not explicitly disclose analyzing time dependent changes in cross talk levels and line attenuation at the second end of the channel. Zuranski in a similar field of endeavor discloses analyzer (130) analyze time dependent changes (performs spectral analysis, the analyzer performs FFT and can also perform inverse Fourier transformation, in a

first frequency range through an equalizer reducing or attenuating cross talk) in cross talk levels and line attenuation at the second end of the channel (col. 4, lines 1-2, 30-35, 53-67; col. 5, lines 1-12, 30-40; col. 9, lines 25-30, 31-63; vcol. 13, lines 18-42). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to analyze time dependent changes (noise or cross talk signal to noise ratio) to maintain line attenuation as taught by Zuranski in the system of Levin because it can reduce or mitigate the near and far end cross talk noise from data propagated in data rate upstream or downstream of communication signal.

Regarding claims 2, 11 and 32, Levin discloses first end comprises a central office (CO) end, and the second end comprises a premise equipment (CPE) end (fig. 1; col. 3, lines 50-60).

As per claims 3, 6, 12, 15, 33 and 36, Levin discloses the channel is asymmetrical as in ADSL (col. 3, lines 51-51).

As per claims 4, 13 and 34, these claims are analyzed in a similar fashion as claims 2, 11 and 32 as Levin discloses transmitter to receiver and receiver to transmitter functions in a transceiver embodiment.

Regarding claims 5, 14 and 35, Levin discloses the channel is non-overlapping (see col. 4, lines 15-31).

As per claims 7, 16 and 37, the claims are design related and the xDSL technology can be adapted to a very high bit-rate DSL channel in Levin.

As per claim 31, Levin and Zuranski combined disclose all limitations of the claim. Zuranski further discloses a computer or other computing device, which

obviously could store program instructions or steps for retrieving channel characteristics (modem) of a discrete multi tone communication system (col. 6, lines 31-36).

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patents:

(US Pub. 2002/0131371) to Rudnick.  
(USP 6,044,403) to Gerszberg et al.  
(USP 6,373,860) to O'Toole et al.  
(USP 6,192,109) to Amrany et al.  
(USP 5,487,069) to O'Sullivan.  
(USP 6,721,394) to Murphy et al.  
(USP 6,724,849) to Long et al.  
(US Pub. 2005/0041753) to Cunningham.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone

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number for the organization where this application or proceeding is assigned is  
571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.  
August 31, 2006.

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER